Available online at www.sciencedirect.com
ScienceDirect
Carbohydrate Polymers 69 (2007) 811–812
Carbohydrate Polymers
www.elsevier.com/locate/carbpol

Book reviews

Benjamin Caballero, Lindsay Allen, Andrew Prentice (Eds.), Encyclopedia of Human Nutrition, 2nd Ed., Elsevier Ltd, Oxford, 2005 (clii + 2230 pp., 4 volume set, £625.00, ISBN: 0-12-150110-8)

The science of human nutrition and its application are of great importance for human health. Almost 60% of diseases that kill humans are related to diet, therefore understanding the concepts and interrelationship between nutrient needs, dietary intake and health outcomes is essential. The *Encyclopedia of Human Nutrition* is a four volume set which provides detailed information on many aspects of human nutrition such as functional foods, food safety, clinical nutrition, epidemiology of related disease and gastrointestinal disorders. The *Encyclopedia of Human Nutrition* is arranged as a series of entries in alphabetical order. Each entry consists of various articles, which are arranged in a logical sequence within the entry. These articles deal with different aspects of the topic, and contain suitable illustrations, flow charts and data tables, which support the articles.

The Encyclopedia provides in depth information on a wide variety of amino acids, carbohydrates, polysaccharides, cereals, etc. Amino acids are a series of small organic molecules from which proteins are made. Detailed information on the chemistry and classification of amino acids, their metabolism and their specific function is provided. Carbohydrates are major sources of energy in human nutrition. Carbohydrates are a group of substances with different structures and varying physical, chemical and physiological properties. The encyclopedia contains detailed information on carbohydrate chemistry and classification, regulation of metabolism, requirements and dietary importance and resistant starch and oligosaccharides. Cereal grains are dietary staples that provide a very substantial proportion of the dietary energy, protein and micronutrients for humans. The encyclopedia provides detailed information on the types of cereal and their role in diet, grain characteristics, energy macronutrient and fibre content, non-nutrients of potential benefits and potential adverse effect. Glucose and its polymers are important energy sources for living organisms and structural components of plants. Detailed information on the chemistry and dietary sources of glucose, its metabolism, maintenance of blood glucose levels, glucose tolerance, and diabetes is also provided.

The Encyclopedia is an ideal reference source for human nutrition as it provides three essential features, which are a contents list, cross references and a detailed index. These features enable the reader to access the full potential of the material contained within the encyclopedia by assisting the location of the topic of choice with ease. In conclusion, the *Encyclopedia of Human Nutrition* is an excellent reference source covering all aspects of nutrition and clinical nutrition. It is an invaluable asset for all individuals involved in food science and nutrition, including students, research scientists and academics.

Zaheera Parveen
John F. Kennedy*
Chembiotech Laboratories,
Institute of Research & Development,
University of Birmingham Research Park,
97 Vincent Drive, Edgbaston,
Birmingham B15 2SQ, UK

Available online 13 March 2007

* Corresponding author.
doi:10.1016/j.carbpol.2007.03.005

Herbert Holik (Ed.), Handbook of paper and board, Wiley-VCH, Weinheim, Germany, 2006 (xix+505, £105-00, ISBN: 3-527-30997-7)

Paper is a ubiquitous material in our life, and we hardly ever think about the technical, economic or social importance of paper. The first paper-like material was "papyrus", which was used by the ancient Egyptians, Greeks and Romans. The paper which we use nowadays, was first created in China. It was an expression of art but also a carrier of information, initially accessible only for the highest class of society. In current civilised life we

zcannot imagine even one ordinary day without a piece of paper. It has become a constant attribute of human life.

The volume "Handbook of Paper and Board" is a cross-sectional, but still profound, analysis of paper history, technology, manufacture, structure and economic aspects of paper and board. Paper structure is based on fibrous raw materials, which may be primary fibres (wood, annual non-wood plants) or secondary fibres (which are produced from recovered paper) (Chapter 2). Plenty of chemical additives such as starch, dyes, brightening and whitening agents, chelators and complexion compounds are used in the manufacture of paper (Chapter 3). Moreover, stock preparation and water role in production are some of the preliminary steps (Chapters 4, 5).

There are different types of paper, therefore miscellaneous changes may be rendered to the manufacturing process to achieve the final desirable effect of paper quality. However, some general sections while manufacturing process are preserved. These are: the flow system, the headbox and the wire section, the press section, the drying, the size press, the coating section, the calender and pope reeler (Chapter 6). Coating of paper and board is the following step of production (Chapter 7) and the finishing process ends the production (Chapter 8). Additional aspects, such as controlling of machines, paper and board testing or book preservation, which are present during these processes are also included in this book (Chapters 9, 12, 13). Separate attention is given to the grades and properties of paper and board (Chapter 11).

This book is constructed in very readable way. There are a lot of figures and schemes, which simplify the understanding of entire processes. Therefore, this handbook may be exploited not only by specialists and manufacturers of paper and board, but also may be an interesting guide for non-specialists, which look into it just for pure curiosity.

Katarzyna Bunko
John F. Kennedy*
Chembiotech Laboratories,
Institute of Research & Development,
University of Birmingham Research Park,
Birmingham B15 2SQ, UK

Available online 14 February 2007

* Corresponding author.
doi:10.1016/j.carbpol.2007.02.006

Da-Wen Sun (Ed.), Emerging technologies for food processing, Elsevier Academic Press, San Diego, CA, USA, 2005 (xvii+771 pp., £100.00, ISBN: 0-12-676757-2)

Food producers want to be able to store food from the time of plenty to the time of need and to be able to transport food over long distances without any detrimental effects on food quality. The continuous emergence of newly developed food processing technologies facilitates such requirements by making the food industry more diverse, competitive and efficient. *Emerging Technologies for Food Processing* provides in depth information on advanced processing technologies.

This volume contains 28 chapters and is divided into 6 parts. The first 3 parts focus on the latest non-thermal food processing methods. Part 1 contains 3 chapters that detail high pressure processing techniques, whilst part 2 is composed of 5 chapters on pulsed electric field techniques. Part 3 consists of 7 chapters that cover other non-thermal processing techniques, such as osmotic dehydration, ultrasound, irradiation, radio frequency electric fields, pulsed light, and athermal membranes. Part 4 contains 6 chapters that provide detailed information about alternative thermal processing techniques such as microwave heating, radio frequency processing, ohmic heating, combined microwave vacuum drying, new hybrid drying and thermal monitoring utilising NMR technology. The penultimate part is composed of 4 chapters, which discuss the latest developments in food refrigeration. The final part consists of 3 chapters that focus on minimal processing of vegetables, fruits, juices, ready meals and modified atmosphere packaging.

This book provides a comprehensive overview of innovations in food processing, with particular focus upon topics that are vital to the food industry today, and pinpointing the trends in future research and development. In conclusion, *Emerging Technologies for Food Processing* is highly recommended for students, researchers, food engineers and technologists with specific interests in many areas of food science and technology.

Zaheera Parveen
John F. Kennedy*
Chembiotech Laboratories,
Institute of Research & Development,
University of Birmingham,
Research Park, 97 Vincent Drive,
Edgbaston, Birmingham, B15 2SQ, UK

Available online 14 February 2007

* Corresponding author.
doi:10.1016/j.carbpol.2007.02.005